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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,878	06/02/2004	Timothy Grant Hall		3877
33687	7590	09/06/2007		
TIMOTHY HALL PQI CONSULTING P.O. BOX 425616 CAMBRIDGE, MA 02142-0012			EXAMINER SUN, XIUQIN	
			ART UNIT 2863	PAPER NUMBER
			MAIL DATE 09/06/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/709,878	HALL, TIMOTHY GRANT	
	Examiner	Art Unit	
	Xiuqin Sun	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. The reply filed on 07/02/2007 is not fully responsive to the prior Office Action because of the following omission(s) or matter(s): The manner in making changes to both the specification and the claims does not comply with current practice under federal rules 37 CFR § 1.121. As applicant is prosecuting the application prose, a detail listing of the informalities has been attached. Also, see 37 CFR 1.111.

Below a how-to present your application in a proper format is again quoted herewith for your information (please pay attention to the high-lighted places):

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer

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program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
- (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly

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complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a **single paragraph** of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a **separate sheet** if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Now, the abstract is not on a separate sheet, because "7 Figures" also present on the abstract sheet or on page 16.

2. Claims need to have "status identifier" after each numerals to indicate the status of the claims, such as: 1. (original) or 1. (**current amended**), etc. see MPEP 37 CFR 1.121.

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3. Please **delete all numerals** in front of each of the titles, e.g., delete "1" in front of "Specification", delete "2" in front of "Summary of Invention", etc.
4. Please go to <http://pair-direct.uspto.gov> to retrieve any US references to see the format in formulating an application.

Drawings

5. The drawings are objected to under 37 CFR § 1.83(a) because they fail to clearly show significant features of the subject matter specified in the claims. See MPEP § 608.02(d). At a minimum, representation of the following features should be added to the drawings to show the claimed invention as a whole. For example,

G. Calculate

$$(x_0, y_0) = \left(\frac{\beta_2 - \beta_1}{m_1 - m_2}, m_1 \left(\frac{\beta_2 - \beta_1}{m_1 - m_2} \right) + \beta_1 \right)$$

however,

- iv. When $y_2 = y_3$, $y_1 \neq y_3$, and $d_i > |f_i|c$, for $i = 1, 2$, then

A. Use $r_1 = \frac{\pm f_1 c \sqrt{4\kappa + (f_1 c)^2 + (x_3^2 - x_1^2)}}{2(x_3 - x_1)}$, then

$$\text{B. Use } r_2 = \frac{1}{2(y_3 - y_1)} \left(f_2 c \left((f_1 + f_2) c \pm \sqrt{4\kappa + (f_1 c)^2} \right) + (x_3^2 - x_1^2) + (y_3^2 - y_1^2) \right. \\ \left. - \left(\pm f_1 c \sqrt{4\kappa + (f_1 c)^2 + (x_3^2 - x_1^2)} \right) \left(\frac{x_3 - x_1}{x_2 - x_1} \right) \right)$$

then

are not in the drawing among other features in the claims. No new matter should be entered.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. A formula was introduced in these claims:

G. Calculate

$$(x_0, y_0) = \left(\frac{\beta_2 - \beta_1}{m_1 - m_2}, m_1 \left(\frac{\beta_2 - \beta_1}{m_1 - m_2} \right) + \beta_1 \right)$$

however,

iv. When $y_2 = y_2$, $y_1 \neq y_2$, and $d_i > |f_i|c$, for $i = 1, 2$, then

A. Use $r_1 = \frac{\pm f_1 c \sqrt{4\kappa + (f_1 c)^2} + (x_2^2 - x_1^2)}{2(y_2 - y_1)}$, then

$$B. \text{ Use } r_2 = \frac{1}{2(y_2 - y_1)} \left(\begin{aligned} & f_2 c \left((f_1 + f_2) c \pm \sqrt{4\kappa + (f_1 c)^2} \right) + (x_2^2 - x_1^2) + (y_2^2 - y_1^2) \\ & - \left(\pm f_1 c \sqrt{4\kappa + (f_1 c)^2} + (x_2^2 - x_1^2) \right) \left(\frac{\beta_2 - \beta_1}{m_1 - m_2} \right) \end{aligned} \right),$$

then

in which, parameters such as: r_1 , r_2 , etc. were not defined by words, or definitions of these parameters were not given in the specification.

8. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Formula presented in this claim was not supported by the specification. For example:

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G. Calculate

$$(x_0, y_0) = \left(\frac{\beta_2 - \beta_1}{m_1 - m_2}, m_1 \left(\frac{\beta_2 - \beta_1}{m_1 - m_2} \right) + \beta_1 \right)$$

however,

iv. When $y_1 = y_2$, $y_1 \neq y_3$, and $d_i > |f_i|c$, for $i = 1, 2$, thenA. Use $r_1 = \frac{\pm f_1 c \sqrt{4\kappa + (f_1 c)^2 + (x_1^2 - x_2^2)}}{2(y_2 - y_1)}$, then

$$\text{B. Use } r_2 = \frac{1}{2(y_2 - y_1)} \left(\begin{aligned} & f_2 c \left((f_1 + f_2) c \pm \sqrt{4\kappa + (f_1 c)^2} \right) + (x_3^2 - x_1^2) + (y_3^2 - y_1^2) \\ & - \left(\pm f_1 c \sqrt{4\kappa + (f_1 c)^2 + (x_2^2 - x_1^2)} \right) \left(\frac{x_3 - x_1}{x_2 - x_1} \right) \end{aligned} \right)$$

then

9. Claims rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claims 1-6 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in the reply filed 7/2/07. In that paper, applicant has stated in the claims, and this statement indicates that the invention is different from what is defined in the claim(s) because the examiner does not know how to implement the following equation in the invention:

G. Calculate

$$(x_0, y_0) = \left(\frac{\beta_2 - \beta_1}{m_1 - m_2}, m_1 \left(\frac{\beta_2 - \beta_1}{m_1 - m_2} \right) + \beta_1 \right)$$

however,

iv. When $y_1 = y_2$, $y_1 \neq y_3$, and $d_i > |f_i|c$, for $i = 1, 2$, thenA. Use $r_1 = \frac{\pm f_1 c \sqrt{4\kappa + (f_1 c)^2 + (x_1^2 - x_2^2)}}{2(y_2 - y_1)}$, then

$$\text{B. Use } r_2 = \frac{1}{2(y_2 - y_1)} \left(\begin{aligned} & f_2 c \left((f_1 + f_2) c \pm \sqrt{4\kappa + (f_1 c)^2} \right) + (x_3^2 - x_1^2) + (y_3^2 - y_1^2) \\ & - \left(\pm f_1 c \sqrt{4\kappa + (f_1 c)^2 + (x_2^2 - x_1^2)} \right) \left(\frac{x_3 - x_1}{x_2 - x_1} \right) \end{aligned} \right)$$

then

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Response to Arguments

11. Applicant's arguments filed 07/02/2007 have been fully considered but they are not persuasive.

Applicant's amendment dated 2/7/07 is considered as non-responsive.

Discussion of the same are indicated above.

Contact Information

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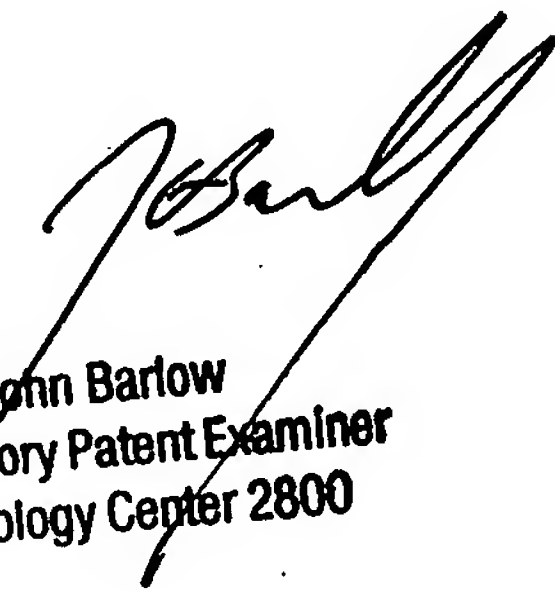
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (571)272-2280. The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571)272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

XS

August 21, 2007


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